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June 1, 1992

Docket Nos. 50-277
50-278

NUCLEAR ENGINEERING & SERVICES DEPARTMENT

License Nos. DPR-44
DPR-56

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

SUBJECT: Peach Bottom Atomic Power Station, Units 2 and 3
Generic Letter 89-13, "Service Water Problems Affecting Safety - Related Equipment"
Implementation of Actions

REFERENCES:
1) Letter from D. R. Helwig, PECo to USNRC, "Response to NRC Generic Letter 89-13, 'Service Water System Problems Affecting Safety-Related Equipment'," dated January 29, 1990.

2) Letter from USNRC to G. A. Hunger, PECo, "Generic Letter 89-13, 'Service Water Problems Affecting Safety-Related Equipment'," dated June 6, 1990.

Dear Sir:

The subject Generic Letter 89-13 required licensees, pursuant to 10 CFR 50.54(f), to advise the NRC whether they have established programs to implement Recommendations I-V of the Generic Letter or that the licensee has pursued an equally effective alternative course of action. Further reporting requirements required that licensees confirm to the NRC that all the recommended actions or their justified alternatives have been implemented within 30 days of such implementation. Philadelphia Electric Company (PECo) detailed our program to implement the Generic Letter recommendations or alternatives in Reference 1. In Reference 2, the NRC found this description of the program to satisfy the intent of the Generic Letter and requested that we notify the NRC when the actions specified in Reference 1 are implemented. This letter is being submitted to satisfy the reporting requirements for Peach Bottom Atomic Power Station (PBAPS) Units 2 and 3. The attachment to this letter includes a summary restatement of each recommended action item along with a summary description of actions taken or programs implemented to address the item.

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This letter satisfies the final notification requirement for Generic Letter 89-13 for the Peach Bottom Atomic Power Station. If you have any questions, or require additional information, please contact us.

Very truly yours,

G. J. Beck, Manager
Licensing Section

Attachment

cc: T. T. Martin, Administrator, Region I, USNRC
J. J. Lyash, USNRC Senior Resident Inspector, PBAPS
T. J. Kenny, USNRC Senior Resident Inspector, LGS

ATTACHMENT

PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3
"SERVICE WATER SYSTEM PROBLEMS
AFFECTING SAFETY-RELATED EQUIPMENT"

NRC Recommended Action I

For open-cycle service water systems, implement and maintain an ongoing program of surveillance and control techniques to significantly reduce the incidence of flow blockage problems as a result of biofouling.

STATUS

As discussed in our response to Generic Letter (GL) 89-13, letter from D. R. Helwig, PECo to NRC, dated Jan. 29, 1990, PBAPS has an established Preventive Maintenance (PM) Program for the inner Intake Structure. This program combined with the PM program for the outer screen structure has shown that the screen structures are adequate. The PM program includes routinely inspecting, trending and removing, as necessary, silt from the pump wet wells. The PM program will continue to be monitored and revised as appropriate. The original review was completed in February of 1991.

As discussed in our Jan. 29, 1990 response, PBAPS has an established program for routine treatment of the Service Water (SW), Emergency Service Water (ESW) and the High Pressure Service Water (HPSW) systems with biocide to control biofouling. The review of this program has resulted in the systems now being treated twice a year with a biocide to eliminate clams rather than the previous once a year treatments. In addition, the chlorination program has been improved for the SW system, which supplies some ESW components, by modifying the frequency of chlorine injection. This improvement will also help control biofouling. Further improvements to the ESW specific chemical injection system were completed to improve the reliability of that system. Titanium tubing and new pumps were installed in the system. Also, ESW chemical treatment flow rates were increased to improve the effectiveness of the system. An evaluation of the need to chemically treat HPSW was performed. It was concluded that the existing programs are adequate. This review was completed in December of 1991.

The Emergency Core Cooling Systems (ECCS) and Reactor Core Isolation Cooling System (RCIC) room coolers are now flushed at elevated test pressures and flows during routine testing. The flushing practices for the ESW and HPSW systems were reviewed and found adequate.

The current lay-up practices for systems using service water as a source were reviewed and found to be acceptable. This review was completed in April of 1991.

Recommended Action II

Conduct a test program to verify the heat transfer capability of all safety-related heat exchangers cooled by service water. The total test program should consist of an initial test program and a periodic retest program. Both the initial test program and the periodic retest program should include heat exchangers connected to or cooled by one or more open-cycle systems. An example of an alternative action that would be acceptable to the NRC is frequent regular maintenance of a heat exchanger in lieu of testing for degraded performance of the heat exchanger.

STATUS

The initial test program to verify the heat transfer capabilities of safety related heat exchangers cooled by the ESW system and the HPSW System was completed in December 1991 for Unit 3 and May 1992 for Unit 2. The results of these tests and future tests will be used to establish equipment operability and determine the frequency of further testing and maintenance. This program was different than the program recommended in Generic Letter 89-13. These differences are detailed in our January 29, 1990 letter and were found acceptable by the NRC in its letter dated June 6, 1990.

Recommended Action III

Ensure by establishing a routine inspection and maintenance program for open-cycle service water system piping and components that corrosion, erosion, protective coating failure, silting and biofouling cannot degrade the performance of the safety-related systems supplied by service water.

STATUS

A review of the existing PM programs at PBAPS was completed. This review resulted in the use of ultrasonics and radiographs to inspect pipe on a periodic basis, in addition to periodic component cleaning and visual inspections. This review was completed in March of 1991.

Recommended Action IV

Confirm that the service system will perform its intended function in accordance with the licensing basis for the plant. Reconstitution of the design basis of the system is not intended. This confirmation should include a review of the ability to perform required safety functions in the event of failure of a single active component. To ensure that the as-built system is in accordance with the appropriate licensing basis documentation, this confirmation should include recent (within the past 2 years) system walk downs.

STATUS

As discussed in our January 29, 1990 letter, Design Baseline Documents (DBD) for the ESW System and the HPSW System have been issued. During the development of these documents, a review of design documents such as calculations, specifications, the Updated Final Safety Analysis Report (UFSAR) modification documentation, system drawings and other licensing basis documents was completed and confirmed that these systems will perform their intended functions. In addition, an NRC Safety System Functional Inspection (SSFI) was performed in March of 1990, a NRC follow up ESW SSFI inspection was conducted in the Fall of 1990. While significant deficiencies were identified in the first SSFI for the ESW system, these deficiencies have been corrected. Further, the NRC completed a special inspection of the ESW system in December of 1991 and no significant deficiencies were identified at that time. An SSFI was completed by PECo in October 1990 on the HPSW system and no significant deficiencies were identified.

As discussed in our January 29, 1990 letter, the accessible portions of the ESW and the HPSW systems have been walked down and no significant deficiencies have been identified.

Recommended Action V

Confirm that maintenance practices, operating and emergency procedures, and training that involves the service water system are adequate to ensure that safety-related equipment cooled by the service water system will function as intended and that operators of this equipment will perform effectively. This confirmation should include recent (within the past 2 years) reviews of practices, procedures, and training modules. The intent of this action is to reduce human errors in the operation, repair and maintenance of the service water system.

STATUS

PBAPS has reviewed the ESW and HPSW systems to ensure they will function as intended and the opportunity for human error is minimized. This included a review of station operating procedures, emergency operating procedures, alarm response procedures, off normal and operation transient procedures, special event procedures and maintenance practices. In addition the maintenance, operations and technical staff training programs were reviewed and found to be adequate. This review was completed in April of 1991.